

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

CONSTRUCTION RESEARCH &)	CASE NO. 1: 05 CV 1003
TECHNOLOGY, GmbH, et al.,)	
)	
Plaintiffs,)	
)	
v.)	JUDGE DONALD C. NUGENT
)	
THE EUCLID CHEMICAL COMPANY,)	MEMORANDUM OPINION
)	AND ORDER
Defendant.)	

This patent action is before the Court subsequent to a Markman hearing. The parties have filed opening Markman briefs on claim construction, response briefs, as well as supplemental briefs.

I. BACKGROUND

A. Plaintiffs' Claims and Defendant's Counterclaims

In April 2005, Construction Research & Technology, GmbH ("Construction Research"), Degussa Construction Chemicals, Inc. ("Construction Chemicals"), and Degussa Admixtures, Inc. ("Degussa Admixtures") (collectively "Plaintiffs") filed a four-count Complaint against The Euclid Chemical Company ("Defendant") in this Court. (ECF # 1.) According to the Complaint, Construction Research is the sole owner and assignee of the two patents at issue in this lawsuit (the "patents-in-suit"). The first patent is United States Patent No. 6,267,814, which is entitled CEMENTITIOUS DRY CAST MIXTURE ("the '814 patent"), and the second patent is United States Patent No. 6,461,425, which is also entitled CEMENTITIOUS DRY CAST MIXTURE ("the '425 patent"). (*Id.* at ¶¶ 10-16.) The Complaint states that Construction Research licensed the '814 and the '425 patents to its affiliate, Construction Chemicals, which in turn sublicensed the patents to

Degussa Admixtures. (*Id.* at ¶¶ 17-18.)

The Complaint provides the following explanation concerning cementitious dry cast mixtures:

Cementitious dry cast mixtures are cementitious-based compositions, including, for example, cementitious-based pastes, mortars, and concrete compositions, which include a hydraulic cement binder having consistencies ranging from stiff to extremely dry. A hydraulic cement binder is a material that, when mixed with water in proper proportions, will undergo hydration reactions and harden. Cementitious dry cast mixtures are used to form many articles including, for example, concrete block, concrete pipe, roof tiles, masonry units, concrete paver units, extruded plank, and other dry cast cementitious articles in a mold or from an extrusion die. The terms “dispersant,” “plasticizer,” and “water reducer” are used interchangeably in the cement additives and admixtures industry to refer to materials that reduce the amount of water needed to hydrate cementitious mixtures.

(*Id.* at ¶¶ 19-22.) Plaintiffs state that they “have invented cementitious dry cast mixtures and methods that utilize a derivatized polycarboxylate dispersant in order to improve the performance of cementitious dry cast mixtures, including but not limited to, the consolidation of cementitious dry cast mixtures, the inventions being claimed in the ‘814 patent and the ‘425 patent.” (*Id.* at ¶ 23.) Degussa Admixtures markets and sells derivatized polycarboxylate dispersant admixtures for use in cementitious dry cast mixtures throughout the United States. (*Id.* at ¶ 25.)

Plaintiffs allege that Defendant “sold in the past, offered for sale in the past, currently offers for sale, and currently sells derivatized polycarboxylate dispersant admixtures for cementitious dry cast mixtures under the trade designation EUCON DC to customers throughout the United States.” (*Id.* at ¶ 26.) Plaintiffs contend that, “[a]ccording to a chemical analysis of the EUCON DC polycarboxylate admixture obtained by Plaintiffs, the admixture contains a derivatized polycarboxylate dispersant of the structure claimed by at least claim 1 of the ‘814 patent and at least claim 1 of the ‘425 patent.” (*Id.* at ¶ 29.)

In Count I, Plaintiffs attempt to bring a claim of Contributory Infringement of the ‘814 patent, asserting that Defendant actively induces and contributes to the infringement of the ‘814 patent through customers who buy and use EUCON DC. (*Id.* at ¶¶ 31-40.) In Count II, Plaintiffs allege Inducement of Patent Infringement under the ‘814 patent, claiming that, “[t]hrough its advertising, marketing, promoting, offering for sale, and selling of its EUCON DC polycarboxylate admixture, [Defendant] has in the past actively induced and is currently actively inducing its customers in the cementitious dry cast products industry to directly infringe the ‘814 patent.” (*Id.* at ¶ 45.) In Count III of the Complaint, Plaintiffs attempt to bring a claim of Contributory Infringement of the ‘425 patent. (*Id.* at ¶¶ 52-61.) Finally, in Count IV, Plaintiffs attempt to state a claim of Inducement of Patent Infringement under the ‘425 patent. (*Id.* at ¶¶ 62-72.) Based on Counts I through IV, Plaintiffs seek the following relief:

- (A) An injunction preliminarily and permanently restraining and enjoining [Defendant] and its officers, agents, parents, affiliates, related companies, servants, employees, and all of those acting [sic] concert or participation with any of them from contributing to the infringement of the ‘814 and ‘425 patents;
- (B) An injunction preliminarily and permanently restraining and enjoining [Defendant] and its officers, agents, parents, affiliates, related companies, servants, employees, and all of those acting [sic] concert or participation with any of them from inducing infringement of the ‘814 and ‘425 patents;
- (C) A judgment declaring that [Defendant] has contributed to the infringement of the ‘814 and ‘425 patents by others;
- (D) A judgment declaring that [Defendant] has induced the infringement of the ‘814 and ‘425 patents by others;
- (E) A judgment declaring that [Defendant] has willfully contributed to the infringement of the ‘814 and ‘425 patents by others;
- (F) A judgment declaring that [Defendant] has willfully induced the infringement of the ‘814 and ‘425 patents by others;

(G) An accounting and an award of damages to Plaintiffs against [Defendant] in an amount adequate to compensate Plaintiffs for [Defendant]'s inducement of infringement of the '814 and '425 patents and/or contribution to the infringement of the '814 and '425 patents, together with prejudgment interest thereon;

(H) A trebling of the damages found or assessed as a result of [Defendant]'s deliberate and willful inducement of infringement of the '814 and '425 patents and/or deliberate and willful contribution to the infringement of the '814 and '425 patents;

(I) A finding that this is an exceptional case under 35 U.S.C. § 285, thereby warranting an award to Plaintiffs against [Defendant] of Plaintiff's costs of this action and reasonable attorney's fees; and

(J) Such further relief as the Court may deem just and proper.

(*Id.* at 12-13.)

Defendant filed its Answer, Affirmative Defenses, Counterclaims, and Demand For Jury Trial.

(ECF # 16.) In that pleading, Defendant denied all material allegations in Plaintiffs' Complaint, and asserted two counterclaims. In its First Counterclaim, Defendant seeks a declaration of invalidity of the '814 patent and the '425 patent. (*Id.* at ¶¶ 10-12.) In its Second Counterclaim, Defendant seeks a declaration of non-infringement of the '814 patent and the '425 patent. (*Id.* at ¶¶ 13-15.) In its prayer for relief, Defendant asks that:

A. Plaintiffs' Complaint be dismissed in its entirety and with prejudice, with Plaintiffs taking nothing.

B. This Court enter a judicial determination of the rights and responsibilities of the parties and enter a decree to the effect that:

1. [Defendant] has not infringed, contributed to the infringement of, or induced the infringement of any valid and enforceable claim of the '814 Patent and [Defendant] is entitled to use and sell its accused product without any threats, intimidation or other interference by or from Plaintiffs;
2. [Defendant] has not infringed, contributed to the infringement of, or induced the infringement of any valid and enforceable claim of the '425 Patent and [Defendant] is entitled to use and sell its accused product without any threats, intimidation or

other interference by or from Plaintiffs;

3. The '814 Patent is invalid, void and of no effect in law;
4. The '425 Patent is invalid, void and of no effect in law; and
5. The Counterclaims are exceptional under 35 U.S.C. § 285.

C. This Court enjoin Plaintiffs as well as Plaintiffs' officers, agents, servants, employees, attorneys, representatives, distributors, and all other persons in active concert or participation with Plaintiffs from stating, implying or otherwise communicating to others that [Defendant] or its customers have infringed, contributed to the infringement of, or induced infringement of either the '814 Patent or the '425 Patent.

D. [Defendant] recover from Plaintiffs its damages, fees and costs, including but not limited to its reasonable attorneys' fees under 35 U.S.C. §§ 284 and 285.

E. [Defendant] be awarded such other relief as the Court deems just and proper.

(*Id.* at 12-13.) Plaintiffs filed a Reply Response to Defendant's Counterclaims. (ECF # 18.)

B. The Markman Briefs

Plaintiffs filed a Markman Brief In Support of Their Proposed Claims Construction. (ECF #

24.) In their brief, Plaintiffs provide the following overview of their construction of the disputed claim terms:

The claims construction issues fall into three general groups. The first group of disputes relate to the meaning of individual words or phrases contained in the claims. The second group of disputes relate to the claimed range of chemical structures of the polymer dispersant. With respect to the second group, all disputes arise from [Defendant] attempting to unduly limit the scope of the claims to specific molecules, rather than to classes of molecules or mixtures of molecules as recited in the claims and supported by the written specification. The third group relates to claim listings of optional components of the cementitious dry cast mixture. However, all of the disputes have one common theme, [Plaintiffs'] claims constructions are **open-ended** to be consistent with the claims and specifications, while [Defendant's] are **closed-ended**, seeking to place narrow restrictions on the Patents-in-Suit that cannot be found in the language of the claims or the specifications, and would make no sense to a person ordinarily skilled in polymer chemistry, as they do not describe real world polymerization reactions.

(*Id.* at 13 (emphasis in original).) Plaintiffs then set forth in detail its open-ended claim construction, and the purported basis upon which the Court should adopt their proposed claim construction. (*Id.* at 13-41.)

On the same day, Defendant filed its Initial Claim Construction Brief. (ECF # 25.) Defendant contends that “each and every claim” of the ‘814 patent and the ‘425 patent “contains errors that must be corrected as a part of the Court’s claim construction.” (*Id.* at 1.) Defendant explains these alleged errors as follows:

These claims define the general chemical structure of a dispersant using a chemical formula having a number of variables like X, Y, R and Z. The variables are further defined by a listing of chemical components (e.g., “X=H, CH₃, C₂, to C₆ Alkyl, Phenyl, Substituted Phenyl such as p—Methyl Phenyl, Sulfonated Phenyl”). This listing of chemical components is known in patent parlance as a “Markush group” or “alternative expression.”

Markush groups or alternative expressions are patent terms of art having a legally-accepted format and scope. In this regard, under the patent laws, a Markush expression can be claimed as “R is a member *selected from the group consisting of* A, B, C *and* D.” Similarly, rather than use the “selected from the group consisting of” language and the conjunction “and” prior to the last member of the group, it is also proper to claim the alternative expression as “wherein R is A, B, C, *or* D.” As to scope, claims containing a Markush group or alternative expression are construed so that only one chemical component can be plugged into the chemical formula to make the chemical structure, unless qualifying language is added expressly stating that mixtures of the chemical components can be plugged into the chemical structure.

* * *

The variables defined in all of the [Plaintiffs’] Patents are not in a format accepted by the United States Patent and Trademark Office (“USPTO”)—there is no “or” prior to the last member of the group. In [Plaintiffs’] claims, R is A, B, C, D (in contrast to A, B, C or D). This is not a proper format for an alternative expression, because it is patently unclear whether the claim covers one member of the group, two members of the group, mixtures of members of the group or all members of the group. ***An alternative expression, on the other hand, must be unambiguous with respect to questions of scope and clarity.***

(*Id.* at 1-3) (internal citations and footnotes omitted) (emphasis in original).) Defendant asserts that,

under the relevant law, this Court cannot correct the errors in Plaintiffs' claims. (*Id.* at 3.) As such, Defendant argues that "the Court cannot construe these claims and must hold that every claim of [Plaintiffs'] patents is invalid as being indefinite under 35 U.S.C. § 112, ¶ 2." (*Id.*) Hence, according to Defendant, the Court should hold that all of the claims are invalid, the patents-in-suit are thus invalid, and this case must be dismissed in its entirety. (*Id.*)

Alternatively, Defendant argues that, if the Court does not find the patents to be invalid, and determines that the disputed claim terms are amenable to construction, the Court should adopt Defendant's claim construction. (*Id.* at 4.) Defendant "seeks a construction in line with the legally-recognized scope of an alternative expression — i.e., the claims only cover one member of the group, not combinations of the members or all of the members of the group unless qualifying language is present." (*Id.*) Defendant also sets forth its claim construction for specific words and phrases in the patents-in-suit, and provides the alleged basis upon which the Court should adopt its construction. (*Id.* at 16-30.)

Plaintiffs filed a Reply Brief to Defendant's Markman Brief. (ECF # 30.) In their brief, Plaintiffs argue that Defendant erroneously insists on closed-claims constructions for the claim terms, that would exclude combinations of atoms and chemical groups. (*Id.* at 6.) Plaintiffs contend that the intrinsic evidence of record mandates that the "claim terms are open-ended and may comprise of combinations of recited and unrecited atoms and/or chemical groups." (*Id.* at 6-7.) Accordingly, Plaintiffs' position is that the claims of the patents-in-suit are valid and do not require correction in order to conduct claims construction analysis. (*Id.* at 7.)

On the same day, Defendant filed its Opposition to Plaintiffs' Markman Brief In Support Of

Their Proposed Claims Construction. (ECF # 29.) Defendant maintains that Plaintiffs' proposed construction is indefinite under 35 U.S.C. § 112, ¶ 2, because it is limitless and fails to provide guidance to third-parties as to the scope of the claims. (*Id.* at 2.) According to Defendant, Plaintiffs seek "to impermissibly broaden the scope of its claims by proffering a construction covering combinations of group members[,] even though the requisite qualifying language is nowhere to be found in its claims." (*Id.* at 3.) Based on its position that Plaintiffs' claims and claim constructions are invalid under the applicable law, Defendant urges this Court to dismiss this case. (*See id.*) In the alternative, Defendant urges this Court to adopt its claims analysis. (*Id.* at 3-15.)

C. The Markman Hearing

1. Opening Statements

In his opening statement at the Markman hearing in this matter, counsel for Plaintiffs stated that the issue before the Court is "simply whether the patents as written are understood by someone of ordinary skill in the industry to encompass open groups or closed groups, meaning can you have any one of among many particular elements on a molecule, and can each molecule be different so long as it fits the description, each molecule in a combination of molecules."¹ (ECF # 40 at 3.) Plaintiffs' counsel gave an example of this, stating:

The claim here, and X equals, okay then we have hydrogen, comma, and we have a methyl group, and you have an ethyl, all these different kids of organic chemicals we don't need to trip our tongues on, but it's comma, comma, comma, comma. And we say, as any organic chemist or polymer chemist knows, that it can be any one of them period. It can be any one of them and any molecule. And each unit of the same molecule, the next unit in the chain can be different.

¹ Counsel for Plaintiffs also made a brief argument concerning the proper meaning of individual words or phrases contained in the claims, such as construction of the terms "cementitious dry cast mixture" and "dispersant." (ECF # 40 at 21-22.)

(*Id.* at 27.) Plaintiffs claim that there was no error in drafting the patents-in-suit, and that Defendant's argument concerning Markush groups is misplaced. (*Id.* at 30, 37.) To that end, Plaintiffs' counsel argued:

We're not trying to be a Markush group. We're not improper, proper or otherwise. We're not a Markush group. We're not closed, we're open. It's an open description. So we didn't try to make a Markush group and didn't get it right. We had no intention of making a Markush group, and it's not.

(*Id.* at 30-31.) Therefore, Plaintiffs assert that the patents-in-suit, as written, properly contain open descriptions for polymers, which are "either/or, or combinations thereof." (*Id.* at 31.)

In Defendant's opening statement, counsel stated that "the asserted claims are insolubly ambiguous and cannot be construed by the Court at all, and as such, they're invalid." (*Id.* at 39.)

Defendant's counsel defined the issues as whether certain symbols contained in the molecule are indefinite Markush-type groups, whether the symbols are closed, and whether the symbols cover combinations of identified alternative atoms or chemical groups. (*Id.* at 40.) Defendant's counsel provided the following analogy in attempting to demonstrate the purported errors in the patents-in-suit:

[I]f I were to be handed an apron and a recipe and told to make a nut bread in the kitchen, and I looked at the recipe, and the recipe said it consists of five ingredients we're going to call A, B, C, D, and E, and I look at the recipe and it says A equals sugar, comma, NutraSweet; B equals baking soda, comma, baking powder; C equals flour, comma, ground meal; D equals nutmeg, comma, allspice; E equals pecans, comma, walnuts. And I look at that recipe, and I say to myself, where do I go from here? With respect to A, is it sugar or is it NutraSweet, or is it both that I'm supposed to put in this recipe?

With respect to the nuts, is it pecans or walnuts, or both? How do I know? I don't know. And that's the issue that's presented by the claims of [Plaintiffs] in this case.

We have alternatives that are given for the letters X, Z, M, R₁, et cetera, but there is no identification of what we're to do with these things because they're construed in a fashion, my able counsel noted to the Court, they're comma, comma, comma, comma claims. X is something,

comma, something, comma, something, comma.

What does that mean? Does it mean it's alternately one or the other? Does it mean you put them all together? Where do you go? And for that reason, we believe that these claims are insolubly ambiguous. One of ordinary skill in the art can't figure out from reading the patent and reading the claims where this thing goes.

(*Id.* at 41-42.) Defendant's counsel stated that there are only two acceptable ways to claim alternative limitations, which are "X is selected from the group consisting of A, B, C, and D" or "R is A, B, C, or D," and Plaintiffs failed to use either of those methods. (*Id.* at 45.) In sum, Defendant's counsel contended that the patents-in-suit are invalid, in that they fail to disclose how to make the polycarboxylate, and the parameters that are to be used in manufacturing the polycarboxylate. (*Id.* at 57.) Alternatively, Defendant's counsel argued that, if the Court ultimately decides to construe the claims, it must do so "in a manner that makes them closed." (*Id.* at 49.)

2. The Evidence

In support of their position, Plaintiffs first called Thomas Vickers, a chemist and an inventor of one of the two patents-in-suit, as a witness. (*Id.* at 59, 63-66.) Mr. Vickers testified as to his understanding of the meaning of individual words or phrases contained in the claims, namely the construction of the terms "cementitious dry cast mixture" and "dispersant." (*Id.* at 71-75.) Mr. Vickers also testified that various articles in the literature relating to polycarboxylate cement dispersants demonstrate that the descriptions of the variables in the patents-in-suit are not unusual, and that the information provided would allow him to build a whole range of molecules. (*Id.* at 76-83.)

Upon the completion of the testimony of Mr. Vickers, Plaintiffs called another chemist, Dr. David Schiraldi, to testify. (*Id.* at 99.) Dr. Schiraldi is an Associate Professor of Macromolecular

Science and Engineering at Case Western Reserve University, with a background in polymers. (*Id.* at 102.) On direct examination, Dr. Schiraldi testified that the “recipe” for the polymer dispersant in the patents-in-suit provides sufficient information from which he would know how to make the molecule described. (*Id.* at 116-17.) He explained that, although the recipe could result in tens of thousands of different potential polymers, such a result is not unusual. (ECF # 38 at 139-40.) Dr. Schiraldi stated that, “[t]here are a lot of patents that have thousands or tens of thousands of compositions covered.” (*Id.* at 140.)

In opposition, Defendant’s first witness was Dr. Donald Feke, an expert in colloidal and particulate systems and the use of polymer dispersants in those systems. (*Id.* at 167, 174.) Dr. Feke has several faculty appointments at Case Western Reserve University, and also serves in administration as Vice Provost for Undergraduate Education. (*Id.* at 168.) Dr. Feke testified that, as written, the patents-in-suit allow for the selection of only one of the variables to be plugged into the formula to form the dispersant. (*Id.* at 178.) Dr. Feke stated, “[i]f you want a monomeric unit that would impact a specific function to the dispersant,” you could not select mixtures of chemical groups for use in the dispersant. (*Id.*) To the contrary, Dr. Feke instructed that “you would select one choice for the individual variables.” (*Id.*)

Dr. Feke further testified that, based on the information in the patents-in-suit as well as the incorporated patents, he could not make the polycarboxylate at issue. (*Id.* at 219-20.) Dr. Feke stated that he would need additional information in order to build that structure. (*Id.* at 220-22.) In particular, Dr. Feke stated, “Coming from a point of view of a dispersant[,] trying to read the recipe and come up with a product, there is not enough in here for me to do that.” (*Id.* at 220-21.)

According to Dr. Feke, he would need extrinsic information, not provided in the patents-in-suit, in order to build the structure. (*Id.* at 221.)

Upon the conclusion of Dr. Feke's testimony, Defendant next called Patrick Hagan as a witness. (*Id.* at 226.) Mr. Hagan has an undergraduate degree in chemistry from Villanova University, and a law degree from American University. (*Id.* at 228.) He is currently a partner at the law firm of Dann, Dorfman, Herrell & Skillman in Philadelphia, Pennsylvania, where he has practiced primarily in patent law since 1978. (*Id.* at 227.)

From 1972 to 1974, Mr. Hagan was a Junior Patent Examiner in the Organic Chemistry Group of the United States Patent and Trademark Office. (*Id.* at 229.) Mr. Hagan testified that his duties as a Patent Examiner were to:

Review patent applications to determine whether they satisfied the statutory requirement for patentability, conduct searches of the prior art, write office actions, which set forth [his] determinations of patentability on the claims of patent applications that were assigned to [him] to examine, [and] confer with [his] supervisor from time to time to discuss particular issues of patentability.

(*Id.* at 230.) Mr. Hagan stated that, as a Patent Examiner, he was exposed to Markush claims in patent applications. (*Id.*)

Mr. Hagan explained alternative limitations as having to do with "situations in claims where there is a recitation of specific claim elements that can be used interchangeably to achieve the purpose of the claimed invention." (*Id.* at 233.) He testified that:

There was a time many years ago when the Patent Office had a general rule prohibiting the use of alternative language in claims, and over the years, that rule was relaxed because it was concluded that it was unfair to penalize applicants due to the limitations of the English language, and consequentially, the Patent Office adopted certain practices that allowed applicants to use alternative claim language.

One of these practices came to be known as the Markush practice, which was named after the case where the practice was approved of which was *ex parte* Markush, and another practice developed around the use of symbolic definitions of chemical substituents in chemical structures, in claims, which has been described in shorthand notation as “or terminology.”

(*Id.* at 234.) Mr. Hagan testified that the claims in this lawsuit appear to be “or terminology claims,” in that “[t]hey have a similarity to what you would expect, what you would normally see as or terminology claims, but they don’t use the term ‘or’ at the end.”² (*Id.* at 237-38.) When asked how these claims “[got] by” the Patent Examiner without the prescribed language for alternative limitations, Mr. Hagan testified that he “assume[d] that it was due to an oversight on the part of the Examiner.” (*Id.* at 238.)

D. The Supplemental Briefs

After the Markman hearing, the parties filed supplemental briefs. In their Post-Markman Hearing Memorandum, Plaintiffs reiterate their position that the patents-in-suit are valid. (ECF # 43 at 5.) Plaintiffs first argue that 35 U.S.C. § 112 requires only that the specifications of the patents-in-suit enable one of ordinary skill in the art to make and use a cementitious dry cast mixture using the ingredients set forth in the claims, and the statute does not require that the specifications enable one of ordinary skill in the art to make and use the ingredients themselves, such as the polymer dispersant. (*Id.* at 5-6.) On this basis, Plaintiffs argue that Dr. Feke’s testimony that the patents-in-suit contain insufficient information to make the polymer dispersant is irrelevant and should be disregarded. (*Id.* at 6.) Nevertheless, Plaintiffs also argue that the incorporation of other patents into the patents-in-suit indeed enable one with ordinary skill in the art to make and use the polymer dispersant. (*Id.* at 6-13.)

Plaintiffs likewise provide argument concerning specific claim constructions. (*Id.* at 13.) In

² Mr. Hagan explained that the language that the United States Patent Office has accepted for “or terminology” claims is, for example, “X stands for ‘or’ is a, b, or c.” (ECF # 38 at 237.)

doing so, Plaintiffs maintain that the patents-in-suit were not intended to contain Markush groups. (*Id.*)

To the contrary, Plaintiffs assert that:

the Patents-in-Suit claim a polymer dispersant having multiple variations of b monomers and/or combinations of a, c or d monomers with b monomers. Such variations are made possible by [Plaintiffs'] use of the **openended** alternative expression “___ = ___, ___, ___” which allows the a, b, c, and d monomers to have different variables at the M, R, R₁- R₅, X, Y, and Z positions.

(*Id.* (emphasis in original).) Thus, Plaintiffs contend that Defendant’s arguments and evidence concerning Markush terminology are not relevant. (*Id.*) Plaintiffs also argue that the Court should adopt its definitions for the disputed claim terms, which include “cementitious dry cast mixture,” “dispersant,” and others. (*Id.* at 19-20.)

Defendant’s Supplemental Markman Briefing only addresses the issue of the construction of the variables M, R, R₄, X, Y, and Z in the formula of the polycarboxylate dispersant.³ (ECF # 42 at 1.) In doing so, Defendant contends that “its position on the claim construction of the polycarboxylate formula (i.e., that *one chemical group is selected for each of the variables*)” necessarily follows from the law and the factual evidence presented at the hearing. (*Id.* (emphasis in original).) Defendant’s position is based on its argument that the variables are Markush-type expressions, and they should be construed as such. (*Id.* at 2-5.)

II. STANDARD OF REVIEW

An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed

³ As to all other claim construction issues, Defendant refers the Court to its Initial Claim Construction Brief (ECF # 25) and its Opposition to Plaintiffs’ Markman Brief In Support Of Their Proposed Claims Construction (ECF # 29). (ECF # 42 at 1, n.1.)

claims to the product accused of infringing. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). It is the first step, commonly known as claim construction or interpretation, that is at issue at this juncture. Construction of patent claims is a question of law for the court. *See id.* at 970-71.

In construing claims, the court should consider first intrinsic evidence of the record: the patent itself, including the claims, the specification, and, if in evidence, the prosecution history. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). This is the most significant source of the legally operative meaning of disputed claim language. *See id.* When analysis of the intrinsic evidence permits unambiguous definition of the meaning and scope of the claims, as it will in most cases, reference to extrinsic evidence is improper. *See id.* at 1583. The Federal Circuit has recently reaffirmed this principle in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005). Although courts can put general or specialized dictionaries and comparable extrinsic sources to appropriate use in helping to ascertain the commonly understood meaning of words, they must give this evidence only the relatively limited weight it is due and not divorce claim terms from the context of the intrinsic evidence. *See id.* at 1318-19, 1322-24.

A court's examination of the intrinsic evidence in a claim construction analysis begins with the words of the disputed claim itself. *See Vitronics Corp.*, 90 F.3d at 1582. The claims define the scope of the right to exclude. *See Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002) (*quoting Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998)). In the absence of a patentee's "express intent to impart a novel meaning to the claim terms," the words of the claims take on the "ordinary and customary meanings attributed to them by those of

ordinary skill in the art.”” *Mars, Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1373 (Fed. Cir. 2004) (quoting *Int’l Rectifier Corp. v. IXYS Corp.*, 361 F.3d 1363, 1369 (Fed. Cir. 2004); *Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed. Cir. 2003)).

In assessing the meaning of the claim terms, a court must always review the specification. *See Vitronics Corp.*, 90 F.3d at 1582. The specification is the part of the patent that “teaches” the invention so that one skilled in the art can make and use it. *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1334 (Fed. Cir. 2003). The specification is highly relevant to claim construction because it may contain special or novel definitions of claim terms when the patentee has chosen to be his own lexicographer, *see Vitronics*, 90 F.3d at 1582, or it may help to resolve ambiguity when the ordinary and customary meaning of a term is not sufficiently clear, *see Teleflex*, 299 F.3d at 1325. In sum, the specification is the “single best guide to the meaning of a disputed term,” *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp.*, 90 F.3d at 1582), and is usually “dispositive,” *Vitronics Corp.*, 90 F.3d 1582.

The final source of intrinsic evidence plays a role similar to the specification in the claim construction analysis. The prosecution history of the patent — the complete record of the proceedings before the Patent and Trademark Office — “provides evidence of how the PTO and the inventor understood the patent” and should be considered by the court. *Phillips*, 415 F.3d at 1317. “The patent applicant’s consistent usage of a term in prosecuting the patent may enlighten the meaning of that term.” *Metabolite Lab., Inc. v. Laboratory Corp. of Am. Holdings*, 370 F.3d 1354, 1360 (Fed. Cir. 2004). The prosecution history may contain “express representations made by the applicant regarding the scope of the claims.” *Vitronics Corp.*, 90 F.3d at 1582. But any limitation found in the history

must be “clear and unmistakable.” *Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1307 (Fed. Cir. 2003).

If a claim is amenable to more than one construction, the claim should, when possible, be construed to preserve its validity. *See Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. 2001); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984). However, the court is not permitted to redraft claims. *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1584 (Fed. Cir. 1995).

III. DISCUSSION

Plaintiffs have asserted that there are three general groups of claims construction issues in this case. (ECF # 24 at 13.) The first of those groups is words and phrases, in which Plaintiffs have asked the Court to adopt their construction of the following claim terms:

- “cementitious dry cast mixture”
- “dispersant”
- “wherein said dispersant is a derivatized polycarboxylate dispersant which is a polymer comprising units derived from at least a substituted carboxylic acid monomer or substituted ethylenically unsaturated monomer.”
- “wherein the dispersant has the general structure. . .”

(*Id.* at 13-19.) The second group is claimed ranges of alternate chemical structures, in which Plaintiffs have asked the Court to adopt their construction of the following claim terms:

- “Z=H, -SO₃M, -PO₃M, -COOM, -OR₃, -COOR₃, -CH₂OR₃, -CONHR₃, -CONHC(CH₃)₂CH₂SO₃M, -COO(CHR₄)_nOH, where n=about 2 to about 6.”
- “Y=H, -COOM.”

- “R=H, CH₃.”
- “M=H, Alkali Metal, Alkaline Earth Metal, Ammonia, Amine, Substituted Amine such as triethanol amine, Methyl, C₂ to about C₆ Alkyl.”
- “R₄ =H, Methyl, C₂ to about C₆ Alkyl, about C₆ to about C₁₀ aryl.”
- “X=H, CH₃, C₂ to C₆ Alkyl, Phenyl, Substituted Phenyl, Sulfonated Phenyl.”
- “R₁, R₂, R₃, R₅ are each independently - (CH₂CHRO)_mR₄ random copolymer of oxyethylene units and oxypropylene units where m=about 10 to about 500 and wherein the amount of oxyethylene in the random copolymer is from about 60% to 100% and the amount of oxypropylene in the random copolymer is from 0% to about 40%.”

(*Id.* at 19-38.) Finally, the third group is optional components, in which Plaintiffs have asked the Court to adopt their construction of the following claim terms:

- “. . . optionally at least one of a pozzolan, a pigment, a set accelerator, a set retarder, a defoaming agent, an air detaining agent, a water repellant agent, and a water reducing agent, . . .”
- “and optionally including at least one of an unsaturated hydrocarbon, an N-polyoxyalkylene maleimide, and a condensation product of an unsubstituted carboxylic acid monomer and an alkoxypolyoxyalkylene primary amine substituted carboxylic acid monomer”

(*Id.* at 38-41.)

In addition to those claim terms, in their Post-Markman Hearing Memorandum, Plaintiffs have specifically asked the Court to adopt their construction of the following claim terms: “m,” “the amount of oxyethylene present is from about 60% to 100%,” and “the amount of oxypropylene present is from 0% to about 40%.”⁴ (ECF # 43 at 21-22.) Plaintiffs have likewise asked the Court to adopt their construction of the claim term “mole fraction.” (*Id.* at 22-23.)

⁴ Plaintiffs also have asked more generally for construction of these terms in the context of claimed ranges of alternate chemical structures, *see supra*.

In contrast, Defendant has urged the Court to find the patents-in-suit to be invalid under 35 U.S.C. § 112, ¶ 2.⁵ (ECF # 25 at 3-7, ECF # 29 at 2.) That statute provides that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, ¶ 2. This standard is satisfied “[i]f one skilled in the art would understand the bounds of the claim when read in light of the specification. . . .” *Exxon Research and Eng’g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Stated another way, a claim is sufficiently clear to avoid invalidity on the grounds of indefiniteness “[i]f the meaning of the claim is discernable, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree.” *Id.* As such, a claim cannot be held to be indefinite simply because it poses a difficult issue of claim construction. *See id.* To the contrary, a patent is presumed to be valid, 35 U.S.C. § 282, and a party challenging the validity of a patent must prove the invalidity by clear and convincing evidence, *see Robotic Vision Sys., Inc. v. View Eng’g, Inc.*, 189 F.3d 1370, 1377 (Fed. Cir. 1999). In the event that the Court does not find in its favor on the issue of invalidity, Defendant has asked this Court to adopt its construction of the disputed claim terms. (ECF # 29 at 3-15.)

As is often the case where the terms to be construed are highly technical in nature, this case represents a classic battle of the experts. On the one hand, Plaintiffs have presented two technical

⁵ Although Defendant has suggested that the patents-in-suit are invalid under 35 U.S.C. § 112, ¶ 1 based on their alleged failure to satisfy the enablement requirement, (ECF # 29 at 13 (stating that the examples of the patents-in-suit do not show one of ordinary skill in the art how to make polymers and such information is required under the statute)), (ECF # 42 at 15 (same)), it has also stated that the issue of invalidity based on the alleged failure to satisfy the enablement requirement is not before the Court (ECF # 42 at 15, n.3 (stating that “[t]he issue of whether the [patents-in-suit] meet the . . . enablement requirement[] of the patent statute is an issue beyond the issue of this Markman hearing.”)).

experts to testify as to what one of ordinary skill in the art would understand the disputed terms to mean. On the other hand, Defendant has presented its own technical expert to testify as to what one of ordinary skill in the art would understand the disputed terms to mean, and a legal expert or patent law expert to provide testimony as to the process of approving a patent that involves claims such as those at issue in the patents-in-suit. The Court would be remiss if it failed to mention that the experts for both Plaintiffs and Defendant were among the most qualified and well-prepared witnesses this Court has had the pleasure of hearing. Each of the witnesses provided lucid testimony on a complicated subject matter in a candid fashion. Nevertheless, although the testimony of witnesses may be received, “in the actual interpretation of the patent[,] the court proceeds upon its own responsibility, as an arbiter of the law, giving to the patent its true and final character and force.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996) (*quoting* 2 W. Robinson, *Law of Patents* § 732, pp. 481-483 (1890)).

After a thorough review of the patents-in-suit, the argument and evidence presented at the Markman hearing, as well as the extensive briefs filed by the parties in this case, the Court finds that, as proposed by Plaintiffs, the disputed claim terms are open-ended and should be construed as such. Although this Court has undoubtedly been faced with a difficult question of claim construction on which the expert witnesses have disagreed in several respects, the patents-in-suit are presumed to be valid. If the claims are amenable to more than one construction, the law instructs this Court to interpret those claims so as to preserve their validity. Hence, Defendant’s argument that each claim of the patents-in-suit is invalid as being indefinite under 35 U.S.C. § 112, ¶ 2 is not well taken. That is, based upon the record before it, the Court finds that Defendant failed to present clear and convincing evidence that the

claims at issue are indefinite. The Court finds that Plaintiffs' construction of the disputed claim terms is supported by the evidence, and the Court therefore adopts Plaintiffs' claim construction language as its own.

IV. CONCLUSION

For the reasons set forth above, the disputed claim terms are construed in the manner proposed by Plaintiffs and the Court declines to grant Defendant's request for a declaration of invalidity of the '814 patent and the '425 patent.

IT IS SO ORDERED.

s/ Donald C. Nugent
DONALD C. NUGENT
United States District Judge

DATED: June 7, 2006